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## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference SP-24	FOR FURTHER ACTION See Form PCT/IPEA/416	
International application No. <b>PCT/KR2004/002031</b>	International filing date(day/month/year) <b>13 AUGUST 2004 (13.08.2004)</b>	Priority date (day/month/year) 01 SEPTEMBER 2003 (01.09.2003)
International Patent Classification (IPC) or national classification and IPC  <b>IPC7 D01F 6/70</b>		
Applicant  <b>HYOSUNG CORPORATION et al</b>		

- This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.
- This REPORT consists of a total of 3 sheets, including this cover sheet.
- This report is also accompanied by ANNEXES, comprising:
  - ☐ (sent to the applicant and to the International Bureau) a total of \_\_\_\_\_ sheets, as follows:
    - ☐ sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).
    - ☐ sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.
  - ☐ (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) \_\_\_\_\_ containing a sequence listing and/or tables related thereto, in electronic form only, as indicated in the Supplemental Box relating to Sequence Listing (see Section 802 of the Administrative Instructions).
- This report contains indications relating to the following items:
  - ☒ Box No. I Basis of the report
  - ☐ Box No. II Priority
  - ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
  - ☐ Box No. IV Lack of unity of invention
  - ☒ Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
  - ☐ Box No. VI Certain documents cited
  - ☐ Box No. VII Certain defects in the international application
  - ☐ Box No. VIII Certain observations on the international application

Date of submission of the demand  <b>06 APRIL 2005 (06.04.2005)</b>	Date of completion of this report  <b>06 DECEMBER 2005 (06.12.2005)</b>
Name and mailing address of the IPEA/KR  Korean Intellectual Property Office 920 Dunsan-dong, Seo-gu, Daejeon 302-701, Republic of Korea Facsimile No. 82-42-472-7140	Authorized officer  OH, SANG KYUN  Telephone No. 82-42-481-8165 

## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/KR2004/002031

## Box No. I Basis of the report

1. With regard to the language, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.

- ☒ This report is based on translations from the original language into the following language English, which is the language of a translation furnished for the purposes of:
- ☐ international search (under Rules 12.3 and 23.1(b))
- ☒ publication of the international application (under Rule 12.4)
- ☐ international preliminary examination (under Rules 55.2 and/or 55.3)

2. With regard to the elements of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:

- ☒ the international application as originally filed/furnished
- ☐ the description:
- pages \_\_\_\_\_ as originally filed/furnished
- pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_
- pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_
- ☐ the claims:
- pages \_\_\_\_\_ as originally filed/furnished
- pages\* \_\_\_\_\_ as amended (together with any statement) under Article 19
- pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_
- pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_
- ☐ the drawings:
- pages \_\_\_\_\_ as originally filed/furnished
- pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_
- pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_
- ☐ the sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing.

3. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages \_\_\_\_\_
- ☐ the claims, Nos. \_\_\_\_\_
- ☐ the drawings, sheets \_\_\_\_\_
- ☐ the sequence listing (*specify*): \_\_\_\_\_
- ☐ any table(s) related to sequence listing (*specify*): \_\_\_\_\_

4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

- ☐ the description, pages \_\_\_\_\_
- ☐ the claims, Nos. \_\_\_\_\_
- ☐ the drawings, sheets \_\_\_\_\_
- ☐ the sequence listing (*specify*): \_\_\_\_\_
- ☐ any table(s) related to sequence listing (*specify*): \_\_\_\_\_

\* If item 4 applies, some or all of those sheets may be marked "superseded."

## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/KR2004/002031

**Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement****1. Statement**

Novelty (N)	Claims 1-8	YES
	Claims	NO
Inventive step (IS)	Claims 1-8	YES
	Claims	NO
Industrial applicability (IA)	Claims 1-8	YES
	Claims	NO

**2. Citations and explanations (Rule 70.7)**

Reference is made to the following documents identified in International Search Report(ISR):

D1 : US 4342847 A (03 August 1982)

D2 : US 6156842 A (05 December 2000)

The claimed invention relates to a process for preparing an elastic fiber having a high modulus and superior resistance to alkali and heat, comprising the steps of adding 1 ~ 20% by weight of a cellulose acetate to a polyurethane or polyurethaneurea solution, based on the total weight of the polyurethane or polyurethaneurea, homogeneously stirring the mixture to obtain a spinning solution, and ripening and spinning the solution.

D1 discloses a continuous process for the production of thermoplastic materials, comprising: I. introducing 4 to 65 parts by weight of thermoplastic polymer into an extruder; II. adding to said thermoplastic polymer 35 to 96 parts by weight of polyurethane forming components; III. discharging from the extruder the product of the process when the reaction of said polyurethane components is substantially complete.

D2 discloses structures and fabricated articles having shape/reshape behavior and processes for their preparation comprising; (A) from about 1 to 100 wt% of at least one substantially random interpolymers; (B) from 0 to about 99wt% of at least one polymer including polyurethane other than that of component A; (C) from 0 to about 50% by weight of at least one tackifier; and (D) from 0 to about 80% by weight of at least one filler.

The feature of the present invention, such as an elastic fiber consisting of polyurethane or polyurethaneurea blended with cellulose acetate, is not disclosed in D1 and D2. Therefore, the subject matter of claims 1 to 8 is novel pursuant to Article 33(2).

The subject matter of claims 1 to 8 is considered to involve an inventive step pursuant to PCT Article 33(3), since it refers to an improved product, such as a high modulus and highly resistant elastic fiber prepared without a sudden change in conditions for preparation of the polymer, which is not known or even suggested in the prior art, particularly in D1 and D2.

Claims 1 to 8 also meet the criteria set out in PCT Article 33(4), because all the claims are considered to be industrially applicable.